

10594027 - GAU: 1797

Patent  
Attorney Docket No. 1034136-000037

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Charles B. Gause

Application No.: 10/594,027

Filing Date: September 25, 2006

Title: TRIMETASPHERES A DRY  
LUBRICANTS, WET ... CONDUCTIVE  
MATERIALS

) Group Art Unit: Unassigned

) Examiner: Unassigned

) Confirmation No.: Unassigned

SECOND  
INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is a SECOND Information Disclosure Statement (IDS) and accompanying form PTO-1449 for the above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of 180 as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee of 180 as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the fee due.
- ☐ Charge \_\_\_\_\_ to credit card for the fee due. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BUCHANAN INGERSOLL AND ROONEY PC

Date April 9, 2007

By: 

Christopher L. North  
Registration No. 50433

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**Buchanan Ingersoll & Rooney PC**  
Attorneys & Government Relations Professionals



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Pro Patent Application of

Charles B. Gause

Application No.: 10/594,027

Filed: September 25, 2006

For: TRIMETASPHERES A DRY  
LUBRICANTS, WET LUBRICANTS,  
LUBRICANT ADDITIVES, LUBRICANT  
COATINGS, CORROSION-RESISTANT  
COATINGS AND THERMALLY-  
CONDUCTIVE MATERIALS

)  
)  
) Group Art Unit: Unassigned

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) Examiner: Unassigned

)  
) Confirmation No.: Unassigned

**SECOND INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 waiver of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

**U.S. PATENT DOCUMENTS**

1. TUTT, U.S. Patent No. 5,172,278 A, issued on December 15, 1992.
2. FAGAN, U.S. Patent No. 5,382,719, issued on January 17, 1995.
3. EKLUND, U.S. Patent No. 5,453,413 A, issued on September 26, 1995.
4. SNOW et al, U.S. Patent No. 5,805,326 A, issued on September 8, 1998.
5. BRADIC, U.S. Patent No. 5,958,523, issued on September 28, 1999.
6. ZETTL et al., U.S. Patent No. 6,063,243, issued on May 16, 2000.
7. ROBINSON., U.S. Patent No. 6,174,780 B1, issued on January 16, 2001.
8. TANAKA et al., U.S. Patent No. 6,251,522 B1, issued on June 26, 2001.
9. TENNE et al., U.S. Patent No. 6,710,020 B2, issued on March 23, 2004.
10. ATA et al, U.S. Patent No. 6,815,067 A, issued on November 9, 2004.

11. ANAZAWA et al., U.S. Patent Publication No. 2001/0050219 A1, published on December 13, 2001.
12. TAKIKAWA et al., U.S. Patent Publication No. 2002/0061638 A1, published on May 23, 2002.
13. FORREST et al., U.S. Patent Publication No. 2002/0189666 A1, published on December 19, 2002.
14. KAJIURA et al., U.S. Patent Publication No. 2003/0015414 A1, published on January 23, 2003.
15. KATORI et al., U.S. Patent Publication No. 2003/0031917 A1, published on February 13, 2003.
16. CRESPI et al., U.S. Patent Publication No. 2005/0067349 A1, published on March 31, 2005.

#### **NON-PATENT LITERATURE DOCUMENTS**

1. IEZZI, ERICK B. ET AL., "A Symmetric Derivative of the Trimetallic Nitride Endohedral Metallofullerene,  $\text{Sc}_3\text{N}@\text{C}_{80}$ ," J.AM.CHEM.SOC., 2002, pp. 524-525, Vol. 124, No. 4, American Chemical Society.
2. KRATSCHMER, W. ET AL., "Solid  $\text{C}_{60}$ : a new form of carbon," NATURE, 9/27/90, pp. 354-358, Vol. 347, Nature Publishing Group.
3. OLMSTEAD, MARILYN M. ET AL., "Isolation and Crystallographic Characterization of  $\text{ErSc}_2\text{N}@\text{C}_{80}$ : an Endohedral Fullerene Which Crystallizes with Remarkable Internal Order," J.AM.CHEM.SOC., 2000, pp. 12220-12226, Vol. 122, No. 49, American Chemical Society.
4. STONE, A.J. ET AL., "Theoretical Studies of Icosahedral  $\text{C}_{60}$  and Some Related Species," Chem. Physics Ltrs., 8/8/86, pp. 501-503, Vol. 128, No. 5,6, Elsevier Science Publishers B.V.
5. TRULOVE, "Filled buckyballs - diamonds from soot," article from website <http://www.research.vt.edu/resmag/2002winter/buckyballs.html>, 9 March 2002 (09.03.2002), available at [www.archive.org](http://www.archive.org). (entire document).
6. NAGASE et al., Chapter 9: Endohedral metallofullerenes: theory, electrochemistry, and chemical reactions, of Fullerenes: Chemistry, Physics and Technology (Kadish and Ruoff, eds.), 2000, John Wiley and Sons, pp. 395-429.

7. JOURNET et al., "Large-scale production of single-walled carbon nanotubes by the electric-arc technique," *Nature*, 1997, vol. 388, pp. 756-758, American Association for the Advancement of Science, Washington, D.C.

8. SAITO et al., "Single-Layered Carbon Nanotubes Synthesized by Catalytic Assistance of Rare-Earths in a Carbon Arc," *J. Phys. Chem.*, 1995, vol. 99, pp. 16076-16079, American Chemical Society, Washington, D.C.

9. WILSON et al., "Advanced materials: fluoruous fullerenes and nanotubes," *Tetrahedron*, 2002, vol. 58, pp. 4041-4047, Elsevier Science Ltd.

10. ZHANG et al., "The Tribological Behaviors of Ordered System Ultrathin Films", *Wear*, 2003, Vol. 254, pp. 959-964.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since these documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b), no fee or statement is required.

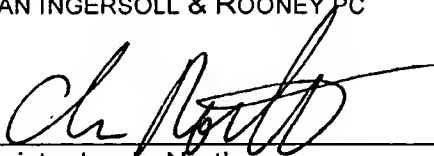
To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: April 9, 2007

By:

  
Christopher L. North  
Registration No. 50433

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Alexandria, VA 22313-1404  
703 836 6620

Substitute for form 1449/PTO &amp; 1449B/PTO

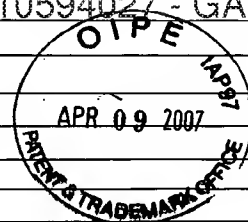
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**SECOND**  
**INFORMATION DISCLOSURE**  
**STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 2

Application Number	10/594,027
Filing Date	September 25, 2006
First Named Inventor	GAUSE
Examiner Name	Unassigned
Attorney Docket No.	1034136-000037



**U.S. PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
/E.M./	5,172,278	A	Tutt	12-15-1992
/E.M./	5,382,719		Fagan	01-17-1995
/E.M./	5,453,413	A	Eklund	09-26-1995
/E.M./	5,805,326	A	Snow et al.	09-09-1998
/E.M./	5,958,523		Bradic	09-28-1999
/E.M./	6,063,243		Zettl et al.	05-16-2000
/E.M./	6,174,780	B1	Robinson	01-16-2001
/E.M./	6,251,522	B1	Tanaka et al.	06-26-2001
/E.M./	6,710,020	B2	Tenne et al.	03-23-2004
/E.M./	6,815,067	A	Ata et al.	11-09-2004
/E.M./	2001/0050219	A1	Anazawa et al.	12-13-2001
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/E.M./	2002/0189666	A1	Forest et al.	12-19-2002
/E.M./	2003/0015414	A1	Kajiura et al.	01-23-2003
/E.M./	2003/0031917	A1	Katori et al.	02-13-2003
/E.M./	2005/0067349	A1	Crespi et al.	03-31-2005

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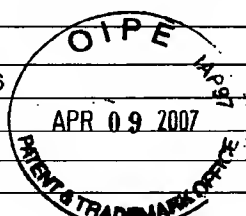
Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	STATUS						
					Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec

**NON-PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/E.M./	IEZZI, ERICK B. et al., "A Symmetric Derivative of the Trimetallic Nitride Endohedral Metallofullerene, Sc <sub>3</sub> N@C <sub>80</sub> ," J.AM.CHEM.SOC., 2002, pp. 524-525, Vol. 124, No. 4, American Chemical Society
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/E.M./	STONE, A.J. et al., "Theoretical Studies of Icosahedral C <sub>60</sub> and Some Related Species," Chem. Physics Ltrs., 8/8/86, pp. 501-503, Vol. 128, No. 5,6, Elsevier Science Publishers B.V.
/E.M./	TRULOVE, "Filled buckyballs - diamonds from soot," article from website <a href="http://www.research.vt.edu/resmag/2002winter/buckyballs.html">http://www.research.vt.edu/resmag/2002winter/buckyballs.html</a> , 9 March 2002 (09.03.2002), available at <a href="http://www.archive.org">www.archive.org</a> . (entire document).
/E.M./	NAGASE et al., Chapter 9: Endohedral metallofullerenes: theory, electrochemistry, and chemical reactions, of Fullerenes: Chemistry, Physics and Technology (Kadish and Ruoff, eds.), 2000, John Wiley and Sons, pp. 395-429.

Examiner Signature	/Ellen McAvoy/	Date Considered	12/03/2009
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Substitute for form 1449/PTO & 1449B/PTO		Complete if Known	
<b>SECOND</b> <b>INFORMATION DISCLOSURE</b> <b>STATEMENT BY APPLICANT</b> (use as many sheets as necessary)		Application Number	10/594,027
		Filing Date	September 25, 2006
		First Named Inventor	GAUSE
		Examiner Name	Unassigned
		Attorney Docket No.	1034136-000037
Sheet 2 of 2			

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/E.M./	JOURNET et al., "Large-scale production of single-walled carbon nanotubes by the electric-arc technique," <i>Nature</i> , 1997, vol. 388, pp. 756-758, American Association for the Advancement of Science, Washington, D.C.
/E.M./	SAITO et al., "Single-Layered Carbon Nanotubes Synthesized by Catalytic Assistance of Rare-Earths in a Carbon Arc," <i>J. Phys. Chem.</i> , 1995, vol. 99, pp. 16076-16079, American Chemical Society, Washington, D.C.
/E.M./	WILSON et al., "Advanced materials: fluorous fullerenes and nanotubes," <i>Tetrahedron</i> , 2002, vol. 58, pp. 4041-4047, Elsevier Science Ltd.
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Examiner Signature	/Ellen McAvoy/	Date Considered	12/03/2009
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